

Colors and Shapes

Strand	Matter
Topic	Investigating colors and shapes
Primary SOL	K.4 The student will investigate and understand that the position, motion, and physical properties of an object can be described. Key concepts include a) colors of objects; b) shapes and forms of objects.
Related SOL	K.1 The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which a) basic characteristics or properties of objects are identified by direct observation; d) a set of objects is separated into two groups based on a single physical characteristic; h) observations are recorded; i) picture graphs are constructed; j) unusual or unexpected results in an activity are recognized; k) objects are described both pictorially and verbally.

Background Information

Objects have many physical properties that can be observed and described. One physical property is color. The color of objects we see is based on which colors are absorbed by the object and which colors are reflected by the object. For example, a red apple absorbs all colors except red, which is reflected back to our eyes. That is why we see red. Green objects absorb all colors except for green, which is reflected to our eyes. Objects that are black absorb all colors and no colors are reflected. White light is made up of all the colors. Objects that are white absorb no colors and all colors reflect back to our eyes.

Our world is made up of shapes—squares, triangles, rectangles, ovals, circles, etc. In addition to being able to point out shapes on a worksheet or in a book, students should understand that shapes are all around us.

Materials

- Color graph
- Bulletin board paper (to make color-and-shape mats)
- Construction paper (to make circles, triangles, squares, and rectangles)
- Teacher-made color-and-shape books for students to illustrate

Vocabulary

red, orange, yellow, green, blue, purple, black, white, circle, triangle, square, rectangle, colors, shapes

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

Introduction

1. Have students sit in a group, and tell them you are going to play a game of “I Spy.” Tell them you are going to give them a color or a shape. They are then (without getting up and without talking) going to find an object in the room that is that color or shape. Go around the groups, and have each student share the object they found that matches the color or the shape. The rule is that they may NOT give an object that has already been identified. Be sure to start with different students for each color or object. (Be sure to use circle, triangle, square, and rectangle; and use red, orange, yellow, green, blue, violet, white, and black.)
2. Each time you give students a color or a shape, write the color or shape on a whiteboard or chalkboard. List all of the items that students name under the color or shape. Your board will begin to look like this:

Rectangle	Circle	Red	Blue	Green
Rug	Clock	Flowerpot on teacher’s desk	Walls	Plant in the flowerpot on the teacher’s desk
Picture on the wall	Top of the can of crayons	Red crayon	Folder on teacher’s desk	Rug
Whiteboard	Hula hoop	Suzie’s skirt		Calendar
Book		Emergency light		Soap bottle at sink
		Exit light		

3. Use the graph you have created to determine for which shape or color you found the most items and for which you found the least items.

Procedure

1. Take a color and shape walk around the school, looking for shapes and colors on signs, doors, bulletin board displays, the playground, etc.
2. Sit in a circle in the classroom. Put colored paper shapes in the middle. First have students sort by shape and then by color. Ask students to use two physical properties to sort. For example, ask students to find the red triangles, the blue circles, etc.

Assessment

- **Other**
 - Have each student make a shape-and-color book. Each page should have a sentence on it such as, “This is a green rectangle.” Read the sentence aloud, and have students draw the correct shape and color it the correct color.

Extensions and Connections (for all students)

- Have students cut out pictures from newspapers and magazines and sort them by color to make a class rainbow.
- Have students make classroom color posters. For each poster, draw or cut out pictures of things which are that color. For example, the red poster might have pictures of strawberries, roses, cherries, etc.
- Have students use geometric cutouts to create pictures.

- Use a digital camera to take pictures of all the shapes found in your classroom or in your school, and help students create a book of shapes. The book will have a section for each shape, and each student will be responsible for writing the text for one page of the book.

Strategies for Differentiation

- Use graphic organizing software to create an electronic version of a classification system (sorting) of items by shape, size, color, etc.
- Allow students to dictate to an adult a description of items and how they are sorted.
- In pairs, have students use handfuls of small items and move among stations that require the items to be sorted by a particular attribute (e.g., color, texture, weight, shape).
- Construct a class Venn diagram using large plastic rings and that is labeled with two attributes (e.g., red/circle; small/triangle).
- Have students create posters representing the various attributes, and display them.